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CINCINNATI COMMITTEE ON  
SEWAGE AND DRAINAGE

REPORT  
1860

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# REPORT

ON

# SEWERS & DRAINAGE

PRESENTED TO THE CITY COUNCIL,

JULY 11th, 1860.



CINCINNATI:

*"Committee on Sewerage & Drainage"*

GAZETTE CO. PRINT, CORNER OF FOURTH AND VINE STREETS.

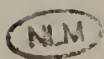
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# REPORT

## ON

### SEWERS AND DRAINAGE.

*TO THE HONORABLE CITY COUNCIL:*

GENTLEMEN: The undersigned, one of your Committee on Sewerage and Drainage, having recently had occasion to visit several of the Eastern cities, and being desirous of obtaining correct opinions in regard to the sewerage and drainage of those cities, prevailed upon our City Civil Engineer, Mr. GILBERT, to accompany him, and aid by his professional experience and knowledge in the inquiries he might be able to make. We were accompanied also by his Honor, the Mayor, and together made it our business during the short time that Mr. GILBERT could remain with us, to devote our attention almost exclusively to the subject of sewerage in Philadelphia, New York, and Brooklyn. And here, I take pleasure in saying that, though clothed with no special authority by our Council, and visiting only as citizens of Cincinnati, we were given every facility by the municipal authorities of those cities for the examination of the subject of our visit, with great cheerfulness and in the spirit of the most enlarged liberality. Believing this subject to be one of great importance to our city, I feel it my duty to state in as brief a manner as possible, the facts elicited by our in-

vestigations, only premising this much, that the more I have examined the matter the more I am convinced that the question of City Sewerage is one of the most important which claims the attentive consideration of the municipal authorities of our large cities.

## PHILADELPHIA.

First, in regard to Philadelphia. We find that previous to the consolidation of the city, which took place in 1854, no plan for general drainage had been arranged, but sewers were built with a view to the then present wants of the city; and since the consolidation, the endeavor has been to adapt former works to something like a system, and arrange new works to meet the wants of the future as well as the present. The system which the experience of Europe has demonstrated as the best, by brick sewers for the mains, and glazed stoneware pipes for the lateral drains, is the one now being gradually introduced by the Chief Engineer of the City of Philadelphia, Mr. KNEASS. A large main sewer of brick, ten feet in diameter, was in progress of building at the time of our visit. This is intended as a main for a very large area of 1,959 acres, and is upward of one mile in length, with a fall of only 37-100 of a foot in each 100 feet. The smaller sewers, for the drainage of lateral streets, and tributary to the mains, are glazed stoneware pipe, one foot in diameter—a glazed pipe of eighteen inches diameter being considered by Mr. KNEASS, who has charge and arrangement of all sewers, as equal in capacity to a brick sewer of three feet interior diameter.

In all cases where sewers are built, the property owners on each side of the street are taxed seventy-five cents per front foot to pay for the same, whether the sewer be large or small. An annual rental also of from one dollar to ten dollars is charged parties using the drains and sewer.



Since the consolidation of the city it has been divided into twelve districts, in each of which is elected a city surveyor. These twelve surveyors together with the Chief Engineer, constitute a Board somewhat similar to our Board of City Improvements, to whom is referred all petitions in regard to sewers and improvements, and each surveyor in his respective district superintends the construction of these works and certifies the same to the Chief Engineer. Private parties frequently build drains in the streets at their own expense, subject in their construction, location, size, &c., to the approval of the Board. We found all the inlets answering somewhat to our well holes at the intersection of the streets, trapped to prevent the escape into the streets of foul gas, and also to prevent rubbish and filth from streets entering the sewer, each inlet having what is termed a "catch-basin" to secure the rubbish and washings of the street, and which, when filled, is cleaned out by the street scavengers. The inlets now used in Philadelphia are formed of cast iron, and are considered a very perfect arrangement and complete success. All matters of a fluid or semi-fluid character are passed into these sewers and drains; and Mr. KNEASS is urging strongly upon the City Councils the propriety of taking steps immediately to prohibit the use of cesspools in the built up portions of the city altogether.

The total length of sewers now built and in operation in Philadelphia, is estimated at something over three hundred miles.

## NEW YORK.

This city has at present some four hundred and ninety miles of sewers laid, but not according to any well arranged system. Sewers are built as petitioned for, and the authorities having charge of this branch of improvement adapt them as best they can to the works heretofore built. They are generally laid throughout the city, however, but the sewerage is not as complete as that of Philadelphia and Brook-

lyn. The sewers are mostly of brick, oviform in shape, and they have been constructed frequently without reference to the future demands and wants of the population. Every effort is now being made, however, to remedy this defect.

The cost of building the sewers is borne by the property adjacent, the city paying the contractor, and then collecting the amount from the property owner. Nevertheless a discretionary power is given the authorities having the matter in charge, as to whether the whole cost of the work shall be assessed upon the property. In some cases the city pays a proportionate expense, as may be determined by the officer.

## BROOKLYN.

The city of Brooklyn is situated somewhat similar to our own in regard to having a good elevation for drainage, and with a population of about 250,000, approximates more nearly our own city than any of the others.

The city authorities have adopted for Brooklyn a complete system of underground drainage for the whole city, and calculated for all extensions which the growth of the city will demand. This system is the result of the combined experience of several of the most accomplished engineers of the cities of New York and Brooklyn, aided by the experience derived from European cities, and is probably as perfect as can be obtained at the present time. This system consists of brick sewers for the mains and glazed stoneware pipe for the lateral drains. The largest sized main is a circular sewer of six feet interior diameter, which is calculated to drain about 3,000 acres of town area, and has a fall of but two feet per mile, and is about two miles in length. The smaller brick sewers are egg-shaped, and the lateral drains glazed stoneware pipe twelve and fifteen inches in diameter; the connections with houses, &c., six-inch pipe.

The work is done under the direction of a Board of Sewerage Commissioners, who were organized under an act of

the Legislature empowering them "to devise and form a plan of drainage and sewerage of the whole city upon a regular system, for the purpose of thoroughly draining and carrying off the water and filth proper to be carried off by sewers, for the health and convenience of the inhabitants of said city." The Board are authorized to borrow such sums from time to time to meet the cash outlay in the construction of the sewers, (in anticipation of the collection of assessments). not to exceed five hundred thousand dollars outstanding at any one time, upon bonds issued by the city, and bearing interest not to exceed six per cent. per annum, and payable in not more than three years.

The Board of Sewer Commissioners are required by the act "to lay out the whole city into sewer districts; each district to consist of a main or principal sewer, having its outlet in the river or bay; and all branches of such main sewer and the collateral or inferior sewers running into the main sewer; and said district shall be so arranged as to be independent of each other, as far as may be." The sewers, when constructed, are paid for by assessment upon all the property in the district so drained; a percentage for collection being added to the assessment on the cost of constructing the sewers. Brooklyn has now between seventy and eighty miles of sewers, built under the direction of this Board within the last two years, and in accordance with the plan adopted. In these cities, Philadelphia, New York and Brooklyn, the city is responsible only for the main and lateral sewers laid down in the streets, the connections with houses, &c. being put in at the expense of the property owners, who are alone held responsible for their efficient action.

It may be thought, after these investigations, I should suggest some action on my own part, but this I do not now propose to do without further consultation with the other members of the Committee and the City Civil Engineer, further than to urge the recommendation made by the present City Civil Engineer, in his report upon the subject of Sewerage, made to the Council in March, 1852, viz: "The adoption

of some plan for the proper and complete sewerage of the city, which shall be simple in general principle, uniform in its detail, and thorough and efficient as its action; such a plan as we can work by and conform to, and will meet our wants in our present state, which may grow with our growth, and which can be completed at any time hereafter, as the necessities of the city may require, and which, when finished, will present a uniform system of complete drainage." What this plan shall be, and how obtained, is a matter for serious consideration, and your Committee will endeavor to take such steps as will lead to some action in regard to it at as early a day as possible. In the mean time, we purpose to build sewers on Vine and Walnut streets immediately, the plan and specifications of which have been prepared by the City Civil Engineer, and approved by your Committee. Advertisement proposals for their construction will be issued by the Board of City Improvements at once.

Respectfully submitted,

HENRY MACK,

*Chairman Com. on Sewerage and Drainage.*







Syracuse, N. Y.

Stockton, Calif.



